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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No.	:	09/547,561	Confirmation No. 6320
Applicant	:	Mathieu et al.	
Filed	:	April 12, 2000	
TC/A.U.	:	2833	
Examiner	:	Alexander Gilman	

Docket No. : P98-US

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REMARKS/ARGUMENTS SUPPORTING APPLICANTS'
PRE-APPEAL BRIEF REQUEST FOR REVIEW

This paper is filed in response to the final Office Action of April 12, 2007 (herein "Final Office Action"). A Notice of Appeal and a Pre-Appeal Brief Request for Review are submitted concurrently herewith.

In the Final Office Action, the Examiner rejected claims 1-9, 14, 15, 18, and 83-92 as anticipated by Chen et al. (WO 99/14404, hereinafter "Chen"). The Examiner rejected claims 1-9, 14, 15, 18-21, 90, and 91 under Section 103(a) as obvious in view of Smith et al. (U.S. Patent No. 5,613,861, hereinafter "Smith '861") and Chen. The Examiner also rejected claims 12 and 13 under Section 103(a) as obvious in view of Smith '861 and Eldridge et al. (U.S. Patent No. 5,832,601, hereinafter "Eldridge"), and the Examiner rejected claims 83-89 under Section 103(a) as obvious in view of Smith '861 and Smith (U.S. Patent No. 5,979,892, hereinafter "Smith '892"). Applicants note that claims 16 and 17 were not rejected under Section 102 or 103 and therefore presumably are in condition for allowance.

Anticipation Rejection Of Claim 1. According to MPEP 2131, "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). Applicants respectfully assert that the Examiner has not shown that Chen describes each and every element recited in independent claim 1. Therefore, the Examiner clearly erred in rejecting independent claim 1 under Section 102(b).

Claim 1 recites that "while the second end of the first element material is released from the substrate, the interconnection element maintains a first geometric shape before application of the external stimulus and changes to a second geometric shape in response to the application of the external stimulus, and the second geometric shape is different than the first geometric shape." The Examiner has not shown that this element is described by Chen.

In rejecting claim 1 as anticipated by Chen, the Examiner did not identify an interconnection element disclosed in Chen that corresponds to the first and second geometric shapes recited in claim 1. More specifically, the Examiner did not identify an interconnection element disclosed in Chen that "maintains a first geometric shape before application of the external stimulus and changes to a second geometric shape in response to the application of the external stimulus." In the Final Office Action, the Examiner refers to Chen's "Figure 2" to support his rejection. Figure 2B is a cross-sectional view of a non-heat-treated coated wire, and Figure 2C is a cross-sectional view of a heat-treated coated wire. The Examiner did not, however, identify any portion of Chen that describes changing a geometric shape of Chen's coated wire, nor did the Examiner show that a comparison of Figures 2B and 2C illustrates a change in the geometric shape of Chen's coated wire.

The Examiner may be relying on Chen's teaching that heat treatment or annealing improves certain mechanical operating properties of the coating 206/210 such as increased yield strength, increased elastic modulus, improved temperature stability, and stress relief. The Examiner has not, however, set forth any evidence that such improvements in mechanical properties of the coating 206/210 would necessarily result in a change in the shape of the coating. The Examiner therefore did not establish that Chen's teachings regarding heat treatment and annealing inherently disclose changing a shape of the coating 206/210.

Applicants respectfully submit that the Examiner has thus failed to show that Chen describes each and every element set forth in claim 1. Namely, the Examiner has failed to show that Chen discloses "while the second end of the first element material is released from the substrate, the interconnection element maintains a first geometric shape before application of the external stimulus and changes to a second geometric shape in response to the application of the external stimulus, and the second geometric shape is different than the first geometric shape." Therefore, the Examiner clearly erred in rejecting claim 1 as being anticipated under Section 102(b).

Obviousness Rejection Of Claim 1. According to MPEP 2142, the prior art references when combined must teach or suggest all the claim limitations. In this case, the Examiner has not shown that Smith '861 or Chen teaches or suggests the element recited in claim 1 that "while the second end of the first element material is released from the substrate, the interconnection element maintains a first geometric shape before application of the external stimulus and changes to a second geometric shape in response to the application of the external stimulus, and the second geometric shape is different than the first geometric shape."

Smith '861 was discussed in Applicants' Amendment dated January 31, 2007 at pages 8-9. Smith '861 discloses the fabrication of a spring contact structure having a metal layer that is deposited in a manner that introduces a stress gradient in the layer. The stress gradient causes the spring contact to bend into the shape of an arc. Column 5, lines 10-21; column 6, lines 49-63. When an end portion 11 of the spring contact 15 is released from the insulating underlayer 13, the spring contact 15 bends up and away from the insulating underlayer 13 "due to the stress gradient $\Delta\sigma/h$ in the spring contacts 15." Column 7, lines 42-47 and 63-66. Smith '861 plainly fails to teach "while the second end of the first element material is released from the substrate, the interconnection element maintains a first geometric shape before application of the external stimulus." Nor did the Examiner rely on Chen for such a teaching. The Examiner has thus not shown that either Smith or Chen teaches the foregoing feature recited in claim 1. The Examiner therefore failed to show that the combination of Smith and Chen teaches "while the second end of the first element material is released from the substrate, the interconnection element maintains

a first geometric shape before application of the external stimulus." For this reason alone, the rejection of claim 1 in view of Smith and Chen should be withdrawn and claim 1 allowed.

Moreover, the Examiner acknowledged that "Smith et al do not disclose that the second geometric shape is different than the first geometric shape." The Examiner nevertheless concluded that Chen discloses such a feature citing claims 67-71 of Chen and page 23, lines 5-10 of the specification of the instant application. The Examiner's logic is, however, fatally flawed. Page 23, lines 5-10 of the instant specification refers to certain materials known as shape memory alloys and states the well known fact that such a shape memory alloy can be stimulated to change shape, and after the stimulus is removed, the shape memory alloy returns to its original shape. No person of ordinary skill in the field would conclude from the foregoing discussion of shape memory alloys that the recitations in claims 67-71 somehow inherently teach that Chen's untreated coating 206 is a different shape than Chen's treated coating 210 (see Figures 2B and 2C of Chen). Therefore, the Examiner's logic that page 23, lines 5-10 somehow shows that Chen's claims 67-71 inherently disclose that Chen's coating 206/210 changes shape is clearly in error. For at least this additional reason, the rejection of claim 1 in view of Smith and Chen should be withdrawn and claim 1 allowed.

Eldridge and Smith '892. The Examiner did not rely on either Eldridge or Smith '892 to teach the elements of claim 1 discussed above. Claim 1 is therefore patentable over any combination of Chen and Smith '861 with Eldridge and/or Smith '892.

Dependent Claims. Claims 2-15, 18-21, and 83-92 depend directly or indirectly from claim 1 and, at least because of that dependency, are also patentable over the prior art of record taken individually or in combination.

Conclusion. Because claims 1-9, 14, 15, 18, 83-92 are not anticipated under Section 102(b) according to established legal standards of anticipation and claims 1-9, 12-15, 18-21, and 83-91 are not properly rejected under 35 U.S.C. § 103(a), the Examiner clearly erred in rejecting claims 1-15, 18-21, and 83-92. Applicants respectfully request withdrawal of the rejections under Sections 102(b) and 103(a) and allowance of all pending claims.

Respectfully submitted,

Dated: July 12, 2007

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